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### **What beyond oil and gas ? Russian trade specialisation in manufactures**

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## Abstract

### What Beyond Oil and Gas? Russian Trade Specialisation in Manufactures

The objective of the paper is to study Russia's pattern of specialisation in the manufactures trade since 1998. Russia's global trade balance for manufactures is rapidly deteriorating. However, the trade pattern in manufactures should be differentiated according to Russia's main trading partners: the European Union (EU), the Commonwealth of Independent States (CIS) and China. On the basis of trade indicator analysis (revealed comparative advantages and Grubel-Lloyd index of intra-industry trade), we show that Russia is globally disadvantaged in the manufactures trade *vis-à-vis* the EU and China, and advantaged in the trade with the within the CIS. Russia is managing to expand its manufactured exports to other CIS countries. However, it is gradually losing its role of main supplier of capital goods in the post-Soviet space.

*Keywords: international trade, trade specialisation, revealed comparative advantage, intra-industry trade, Russia*

*JEL Classification: F14*

# 1. Introduction

While the transition reforms of the nineties have achieved their principal goals, which are the passage to a market economy and introduction of private property, the economic costs of transition have been very high. Russia experienced a deeper and longer decline than other economies of Eastern Europe. It lost about 40% of its GDP and 50% of its industrial production in 1991-1998, while investments fell by 80%.<sup>1</sup> The recovery started in 1999, but Russia's GDP reached its pre-transition level only in 2006.

The industrial revival after the crisis of 1998 was based on the effects of the rouble devaluation. It was also backed by the increase in world oil prices. Other authors (Aslund, 2004) have pointed to the progress realised on the path of liberalisation, stabilisation and privatisation, in conformity to Washington consensus prescriptions. In terms of political economy, the recovery can be explained by the emergence of a strong developmental state and the enlargement of the planning horizon of economic actors under the Putin presidency (Garanina, 2007).

The favourable price conditions on the world energy markets are contributing to improving the Russian external equilibrium. Several studies have been undertaken in order to analyse the specialisation pattern of Russia in international trade (notably, Ahrend, 2004; Algieri, 2004). Two elements are commonly noted about the Russian foreign trade structure. These are, firstly, its positive trade balance and, secondly, the high level of dependency on hydrocarbon and other primary product exports. This leads us to conclude that there is a vulnerability in the Russian external balance (notably, in the case of the reversal of price conditions on the world energy markets) and about the risks of the "Dutch Disease"<sup>2</sup> and its negative consequences for the domestic manufacturing industries (Ahrend, 2006; Volchkova, 2006; Oomes, Kalcheva, 2007). However, these analyses don't specify the eventual diversification of specialisation patterns depending on the trade partners, which is especially significant for the trade in manufactured products.

In this paper, we study specifically Russia's trade flows in manufactures. What is the pattern of diversification of Russia's manufactured exports (and on what geographic basis)? What are the major tendencies for the imports of manufactured products? The manufactures-

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<sup>1</sup> See Ahrend, Tompson, 2005.

<sup>2</sup> The "Dutch Disease" (Corden, Neary, 1982; Van Wijnbergen, 1984) describes the situation where the discovery of natural resource deposits in a country has a negative effect on the development of other tradable sectors (notably, manufacturing sectors exposed to international competition). A similar phenomenon can be observed in the case of the increase in the world prices of the natural resource exported by the given country.

based approach is necessary for understanding the diversification potential of Russian foreign trade and for evaluating the stability potential of the trade balance in case of a major degradation of price conditions on the world energy and primary commodities markets.

We show the differentiation of Russia's specialisation patterns according to its main partners, which are the European Union (EU), the Commonwealth of Independent States (CIS) and China. While Russia is globally disadvantaged in manufactures trade vis-à-vis the EU and China, it strives to expand its exports of manufactured products towards the CIS. However, its global trade balance of manufactures is rapidly deteriorating.

The second section presents the overview of Russia's manufactures trade. The analysis of the evolution of Russia's global specialisation pattern in manufactures is based on estimates of its revealed comparative advantage (RCA) since 1998. The third section analyses the differentiation of trade patterns by Russia's main trade partners based on RCA and intra-industry trade indices. In section four, we study more closely the dynamics of bilateral trade flows with the CIS, the EU15 and China. Section five concludes the paper.

## **2. Dynamics of Russia's manufactures trade**

### **2.1. General tendencies**

Being one of the main oil and gas exporters in the world, Russia has a strongly positive trade balance which is influenced by world oil price dynamics. Indeed, Russian exports are dominated by fuels and primary products. In 2006, primary commodities accounted for about 75% of Russia's exports, while manufactured goods<sup>3</sup> constituted less than 20% of its exports. In particular, in 2006, fuels represented about 63% of the total exports and ores and metals constituted about 7% (see Table 1). Moreover, while the share of manufactured exports has been declining, the share of primary commodities in Russia's exports has been steadily growing. The latter can be partially explained by the growth of world hydrocarbon prices,

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<sup>3</sup> We use the SITC Rev.3 trade classification. Within the SITC, manufactured goods are defined as groups 5 to 8 less 68 (SITC 5: Chemicals and related products, nes, SITC 6: Manufactured goods classified chiefly by materials, SITC 7: Machinery and transport equipment, SITC 8: Miscellaneous manufactured articles, SITC 68: Non-ferrous metals).

which are causing the value of oil and gas exports to drift upwards, the latter stagnating in volume over the last two years.

On the import side, manufactured products dominate, totalling about 75% of the imports in 2006. Primary commodities account for about 20%, of which food items constitute 14%. The main changes in imports over the studied period concern the increase in the manufactures share, from 57% to 75% over the studied period. The major contribution to the growth in manufactured imports is being made by increasing imports of machinery and transport equipment, rising from 29% to 44% of Russian imports during 1998-2006.

**Table 1. Structure of Russian foreign trade (percentage of total exports/imports)**

	Exports				Imports			
	1998	2000	2003	2006	1998	2000	2003	2006
<b>Total (SITC 0 to 9), USD billion</b>	<b>72.3</b>	<b>103.1</b>	<b>133.7</b>	<b>301.6</b>	<b>43.7</b>	<b>33.9</b>	<b>57.3</b>	<b>137.7</b>
<i>Primary commodities, including fuels (SITC 0 + 1 + 2 + 3 + 4 + 68)</i>	<i>60.3</i>	<i>64.1</i>	<i>66.5</i>	<i>74.5</i>	<i>31.7</i>	<i>32.8</i>	<i>26.2</i>	<i>19.3</i>
All food items (SITC 0 + 1 + 22 + 4)	1.6	1.2	2.0	1.6	23.2	20.2	19.3	14.4
Agricultural raw materials (SITC 2 - 22 - 27 - 28)	3.5	3.1	3.2	2.6	1.0	2.1	1.2	0.9
Ores and metal (SITC 27 + 28 + 68)	16.1	9.1	6.8	7.4	4.1	6.4	3.4	2.7
Non-ferrous metals (SITC 68)	12.3	7.9	5.7	6.2	0.7	1.4	0.7	0.6
Fuels (SITC 3)	39.0	50.6	54.5	62.9	3.3	4.1	2.2	1.3
<i>Manufactured goods (SITC 5 to 8 less 68)</i>	<i>28.7</i>	<i>24.1</i>	<i>22.0</i>	<i>17.0</i>	<i>56.8</i>	<i>56.0</i>	<i>64.8</i>	<i>75.3</i>
Chemical products (SITC 5)	5.5	6.0	4.4	3.8	9.7	11.8	12.5	12.2
Machinery and transport equipment (SITC 7)	7.8	6.2	6.9	4.1	28.6	24.5	31.6	43.4
Other manufactured goods (SITC 6 + 8 less 68)	15.4	11.9	10.7	9.0	18.5	19.7	20.7	19.7
Iron and steel (SITC 67)	7.6	6.0	6.1	5.7	3.3	4.2	3.2	3.9
<i>Textile fibres, yarn, fabrics and clothing (SITC 26 + 65 + 84)</i>	<i>0.9</i>	<i>0.6</i>	<i>0.5</i>	<i>0.2</i>	<i>2.7</i>	<i>4.1</i>	<i>3.4</i>	<i>2.8</i>

Source: UN Comtrade database, SITC Rev. 3. Accessed June 2008.

While Russia's global trade balance is positive, the situation changes dramatically when looking at the manufactures trade taken in isolation. The Russian trade balance for manufactured goods is negative and the disequilibrium is rapidly increasing despite the considerable growth of manufactured exports since 2002 (see Figure 1).

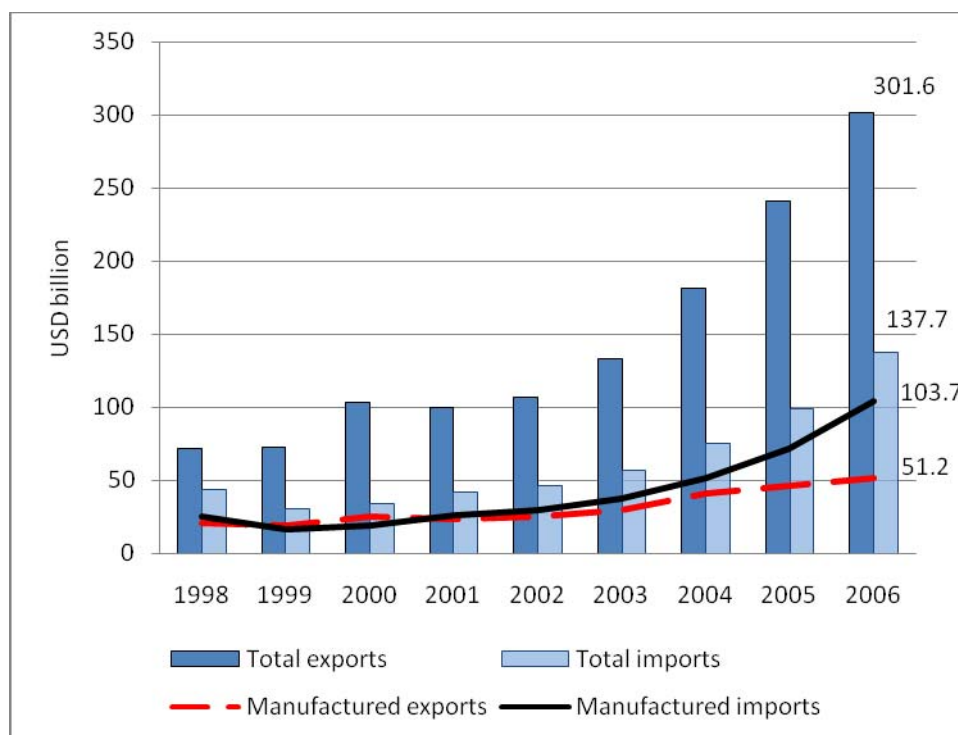
Russian imports of manufactured goods grew by a factor of 5 during the period 1998-2006. The negative trade balance reaches about USD 50 billion in 2006, as compared to a zero (or even slightly positive) balance at the end of the 1990s. Thus, Russia is becoming increasingly exposed to the risk of price volatility concerning its main export products (mainly hydrocarbons and metals).

On the exports side, a more than 100% growth is not spectacular if we take into account the decrease of industrial production in 1991-7 by a factor of 2, and the fact that the



Russian GDP reached its pre-transition level only by 2006. Thus, the dynamics of manufactured exports roughly reflects the industrial production pattern of the Russian economy.

**Figure 1. Russian exports and imports of manufactured goods**



Source: UN Comtrade database. Accessed June 2008.

The analysis of the evolution of Russian manufactures trade by main product groups (see Table 2) reveals a strong positive dynamic for the export of chemicals and related products (SITC 5), manufactured goods classified chiefly by materials (SITC 6 less 68) and machinery and transport equipment (SITC 7). The latter appears as a highly positive fact. However, on the import side, the growth rates are much stronger, especially for the imports of machinery and transport equipment (SITC 7) and chemicals and related products (SITC 5).

**Table 2. Evolution of the Russian manufactures trade by main product groups (% change as compared to previous year)**

	1999	2000	2001	2002	2003	2004	2005	2006
<b>Exports</b>								
Chemicals and related products, nes (SITC 5)	-1.2	57.8	-21.3	-4.1	25.0	37.1	26.4	13.8
Manufactured goods classified chiefly by materials (SITC 6 less 68)	-16.7	27.5	-1.7	2.2	22.0	63.1	16.6	5.8
Machinery and transport equipment (SITC 7)	-9.5	25.9	0.1	25.1	14.8	15.8	-7.9	26.1
Miscellaneous manufactured articles (SITC 8)	42.4	-3.9	-3.3	-6.5	-0.9	5.5	-6.2	13.4
<b>Average for manufactured products</b>	<b>-7.5</b>	<b>29.7</b>	<b>-6.2</b>	<b>6.5</b>	<b>18.5</b>	<b>39.5</b>	<b>11.0</b>	<b>12.3</b>
<b>Average for all products</b>	<b>0.8</b>	<b>41.4</b>	<b>-3.1</b>	<b>6.8</b>	<b>25.3</b>	<b>35.9</b>	<b>33.0</b>	<b>24.9</b>
<b>Imports</b>								
Chemicals and related products, nes (SITC 5)	-28.3	30.5	30.9	6.4	29.0	23.4	41.3	34.9
Manufactured goods classified chiefly by materials (SITC 6 less 68)	-26.9	21.5	22.9	3.2	32.6	35.0	26.4	34.6
Machinery and transport equipment (SITC 7)	-39.2	9.5	38.5	22.6	28.4	47.8	46.8	52.0
Miscellaneous manufactured articles (SITC 8)	-40.1	22.7	45.0	10.8	21.5	21.8	19.8	54.2
<b>Average for manufactured products</b>	<b>-35.1</b>	<b>17.7</b>	<b>34.3</b>	<b>13.7</b>	<b>28.4</b>	<b>37.3</b>	<b>39.0</b>	<b>46.2</b>
<b>Average for all products</b>	<b>-30.7</b>	<b>11.8</b>	<b>23.6</b>	<b>10.3</b>	<b>24.2</b>	<b>31.8</b>	<b>30.6</b>	<b>39.5</b>

Source: UN Comtrade database, SITC Rev. 3. Accessed June 2008.

A more detailed study of the evolution of the manufactures trade structure is necessary in order to understand the main patterns of change in recent years.

## 2.2. Russia's revealed comparative advantages in manufactures

In the tradition of Balassa (1965), the Revealed Comparative Advantage (RCA) index can be represented as (1):

$$\frac{x_{ij}/X_j}{x_{ik}/X_k} \quad (1)$$

where  $x_{ij}/X_j$  is the share of product  $i$  in the total exports of country  $j$  and  $x_{ik}/X_k$  is the share of product  $i$  in the total world exports.

However, the exports-based method of calculation, which was initially justified by the role of import protection measures for the import values, can lead to misunderstanding. For example, is a country effectively specialised in a product  $i$ , if it exports the product  $i$ , say, 1.5 times more than the world average, but also imports twice more? Thus, the imports value

should be taken into account. Moreover, in the case of Russia, the results will be strongly influenced by the price dynamics for the major export goods. That is, the increase of hydrocarbons prices may lead to a decrease in the share of manufactures in the total value of exports.

Given that, in this study, we use the Normalised Balance index, which can be represented as (2):

$$(X_{ijk}-M_{ijk})/(X_{ijk}+M_{ijk}) \quad (2)$$

where *X*-exports, *M*-imports, *i*-product, *j*, *k*-trade partners (the whole world).

The ratio varies between -1 (the product is not exported, revealed comparative disadvantage) and +1 (the product is exported, revealed comparative advantage). The situation of a close-to-zero result (simultaneous exports and imports of the same commodity by both trade partners) reflects intra-industry trade, which will be analysed later in this paper (see section 3.3).

The calculation is based on UN Comtrade statistics (data reported by Russia). The results are presented in Table 3 (see full table in Annex 1).

**Table 3. Russia's revealed comparative advantages in manufactures**

10 product groups with highest RCA index (SITC)		2000	2006	10 product groups with lowest RCA index (SITC)		2000	2006
56	Fertilisers (other than those of group 272)	1.00	0.99	85	Footwear	-0.62	-0.95
51	Organic chemicals	0.63	0.58	54	Medicinal and pharmaceutical products	-0.86	-0.93
67	Iron and steel	0.62	0.52	75	Office machines and automatic data-processing machines	-0.67	-0.91
52	Inorganic chemicals	0.66	0.46	83	Travel goods, handbags and similar containers	-0.92	-0.89
61	Leather, leather manufactures, n.e.s., and dressed furskins	0.46	0.45	84	Articles of apparel and clothing accessories	0.08	-0.86
63	Cork and wood manufactures (excluding furniture)	0.56	0.31	76	Telecommunications and sound-recording and reproducing apparatus and equipment	-0.73	-0.84
66	Non-metallic mineral manufactures, n.e.s.	-0.16	0.16	58	Plastics in non-primary forms	-0.71	-0.81
71	Power-generating machinery and equipment	0.49	0.12	72	Machinery specialised for particular industries	-0.57	-0.80
79	Other transport equipment	0.31	-0.13	88	Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	-0.47	-0.79
62	Rubber manufactures, n.e.s.	-0.08	-0.24	78	Road vehicles (including air-cushion vehicles)	-0.13	-0.77
Average RCA for manufactured products						0.13	-0.34

Source: UN Comtrade database, SITC Rev. 3, author's calculations. Accessed June 2008.

As seen in Table 3, Russia's trade performances deteriorate during the studied period. The average RCA declines from 0.13 in 2000 to -0.34 in 2006. Russia is disadvantaged for most of the product groups. Inversely, it is advantaged for eight product groups only (in decreasing order): SITC 56: Fertilisers; SITC 51: Organic chemicals; SITC 67: Iron and steel; SITC 52: Inorganic chemicals; SITC 61: Leather, leather manufactures, n.e.s., and dressed furskins; SITC 63: Cork and wood manufactures (excluding furniture); SITC 66: Non-metallic mineral manufactures, n.e.s.; and SITC 71: Power-generating machinery and equipment.

Almost all the above-mentioned groups, except for power-generating machinery, are semi-products. Furthermore, these are energy-intensive goods. That is, the hydrocarbon endowment of the Russian economy and the applied regulatory policies (notably, the regulation of the internal energy market enabling low internal prices of natural gas) contribute to the economics of the energy-intensive industries.

Finally, the advantage in technology-intensive power-generating machinery weakens through the studied period, reflecting the decline of the technological potential inherited from the planned economy.

However, this picture of Russia's trade specialisation should be differentiated as the trade structure is significantly differentiated depending on the trade partner.

### **3. Differentiation of specialisation patterns by trade partners**

#### **3.1. Russia's trade pattern: an outlook**

Three large country blocs can be distinguished within the geographical structure of Russian foreign trade:<sup>4</sup>

- 1) The European Union (EU), Russia's main trading partner. The EU15 provide about 40% of Russian foreign trade while the enlarged Union accounts for more than 50% of Russian exports and imports;

- 2) The Commonwealth of Independent States (CIS), which regroups the former republics of the Soviet Union (except the Baltic countries). In 2006, the CIS accounted for

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<sup>4</sup> We use the UN Comtrade data unless otherwise stated.

only about 15% of Russian foreign trade (18.5% in 2000). To compare, in 1991 the part of the CIS in Russian exports was 55% and 58% of the imports.<sup>5</sup>

3) China as a growing regional power in Asia. Despite the fact that Russian-Chinese bilateral trade has more than quadrupled since the beginning of the 2000s, in 2006, China absorbed only 5.2% of Russian exports and provided 9.4% of Russian imports. The share of Russia in Chinese imports was 2.2%, and 1.6% in its exports. The high rates of economic growth in both countries and the stabilisation of their political relations explain the strong development potential for their bilateral trade.

In the coming sections, we analyse the differentiation of Russia's trade in manufactures. The major problem is the quality of statistical data on Russian foreign trade related to the scope of "grey" imports in Russia. The gap between Russia's and its trading partners' statistics is very strong. In particular, Russian imports of manufactured goods seem to be under-valued. However, we observe a gradual improvement of data over the studied period (see Annex 2). Still, Russian-Chinese trade data remains questionable, since in 2006, Russia's manufactured exports to China surpass China's imports from Russia by 1.5 times.

In order to overcome this bias, we use the mirror statistics for the analysis of bilateral trade flows. That is, we calculate the average between the data reported by Russia and by its trading partners.<sup>6</sup> Further, we prefer analysing the SITC 2-digit level in order to reduce the errors linked to misclassification.

The first results show that Russia's trade pattern in manufactured products is highly differentiated depending on the trading partner (see Figures 2, 3, 4):

1) With other countries in the CIS, Russia has a positive trade balance. Moreover, the balance has been gradually improving since the beginning of the 2000s. Globally, the CIS is the only country group for which Russia is steadily increasing its manufactured exports.

2) The EU accounts for the major part of the Russian negative balance in manufactures. Russian manufactured imports from the EU are rapidly increasing.

3) The manufactures trade balance with China became negative since 2003. While we are facing a boom of Chinese exports to Russia, Russian exports are globally stagnating. One should also note a 25% decline in Russian exports in 2006, the exports value passing from USD 4 billion to USD 3 billion. On the other hand, China tripled its manufacturing

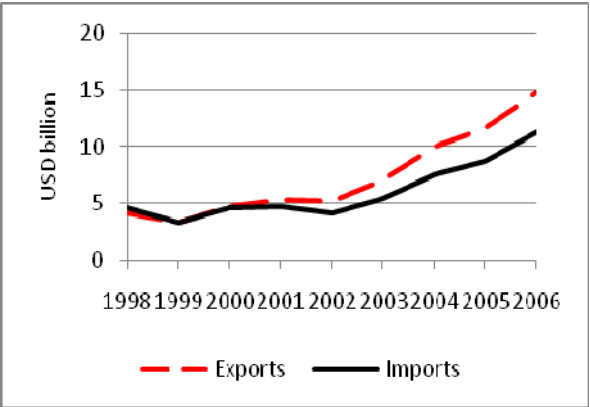
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<sup>5</sup> Interstate Statistical Committee of the CIS, [www.cisstat.com](http://www.cisstat.com).

<sup>6</sup> However, as for the Russia-CIS trade, the mirror data is incomplete. In our study we use the aggregate CIS indicator as reported in the UN Comtrade Database, but note that the direct data from Uzbekistan, Tajikistan and Turkmenistan are lacking. Nevertheless, we consider this fact to be a minor problem as these countries are not Russia's major trade partners in the region.

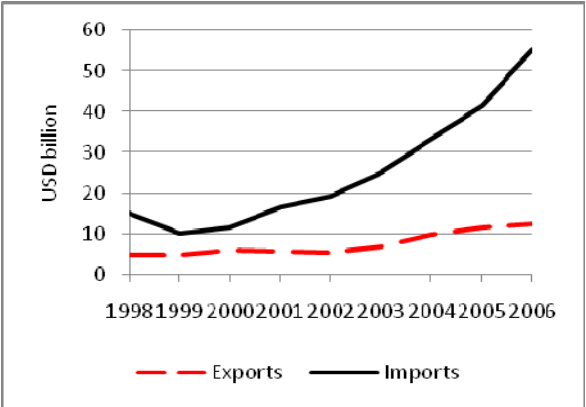
exports to Russia in the last three years. In consequence, the global trade balance with China has become negative for Russia.

**Figure 2. Russian exports and imports of manufactured goods towards the CIS**



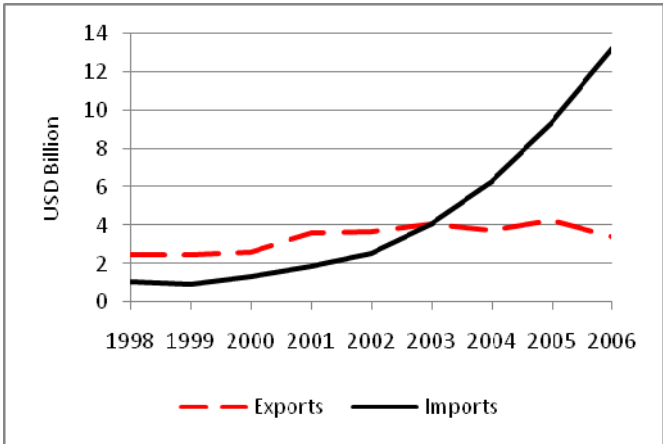
Source: UN Comtrade database, accessed June 2008

**Figure 3. Russian exports and imports of manufactured goods towards the EU15**



Source: UN Comtrade database, accessed June 2008

**Figure 4. Russian exports and imports of manufactured goods towards China**



Source: UN Comtrade database, accessed June 2008

### 3.2. Revealed comparative advantage in bilateral trade by Russia's main trading partners: CIS, EU15, China

Traditional theories of international trade explain trade specialisation by pointing to the differential of relative prices, the latter due to differences in labour productivity (Ricardo approach) or in factor endowments (Heckscher-Ohlin theory). In order to define Russia's specialisation pattern, we calculate the indicator of revealed comparative advantage for bilateral trade as it was defined in the preceding section.<sup>7</sup>

As shown in Table 4, the structure of revealed comparative advantages is strongly differentiated by main Russia's trading partners (see full tables in Annexes 3-5). Russia appears as relatively advantaged in the trade with the CIS while being disadvantaged in the trade relations with the EU. Thus, Russia can be qualified as an intermediate country in the sense of Lassudrie-Duchêne, Mucchielli (1979). According to these authors, a country may be advantaged in a given product vis-à-vis one trading partner while being disadvantaged concerning the same product in its trade relations with another country or country group.

In fact, in the trade with the CIS, Russia possesses revealed comparative advantages for most of the 34 studied product groups. The RCA index is negative only for eight product groups (SITC 84: Articles of apparel and clothing accessories; SITC 73: Metalworking machinery; SITC 85: Footwear; SITC 65: Textile yarn, fabrics, made-up articles, n.e.s., and related products; SITC 82: Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; SITC 52: Inorganic chemicals; SITC 79: Other transport equipment and SITC 67: Iron and steel).

On the contrary, in the trade with the EU15, Russia is clearly disadvantaged. In 2006, it demonstrates a positive RCA index for only six product groups (SITC 56: Fertilisers; SITC 52: Inorganic chemicals; SITC 67: Iron and steel; SITC 51: Organic chemicals; SITC 61: Leather, leather manufactures, n.e.s., and dressed furskins; and SITC 66: Non-metallic mineral manufactures, n.e.s.).

In the Eastern direction, we observe a degradation of Russia's competitive position towards China. According to the present statistical data, in 2006, Russia has a positive RCA index for seven product groups only. These are SITC 56: Fertilisers; SITC 51: Organic chemicals; SITC 71: Power-generating machinery and equipment; SITC 67: Iron and steel; SITC 64: Paper, paperboard and articles of paper pulp, of paper or of paperboard; SITC 55: Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations; and SITC 79: Other transport equipment.

<sup>7</sup> That is,  $(X_{ijk} - M_{ijk}) / (X_{ijk} + M_{ijk})$ . X-exports, M-imports, i-product, j, k-trading partners (countries).

**Table 4. RCA index by Russia's main trading partners**

Russia - CIS trade			2000 2006			Russia – EU15 trade			2000 2006			Russia - China trade			2000 2006		
10 product groups with highest RCA index (SITC)																	
56	Fertilisers (other than those of group 272)	0.51	0.94	56	Fertilisers (other than those of group 272)	0.99	0.97	56	Fertilisers (other than those of group 272)	1.00	1.00						
55	Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	0.34	0.71	52	Inorganic chemicals	0.85	0.66	51	Organic chemicals	0.77	0.64						
75	Office machines and automatic data-processing machines	0.69	0.65	67	Iron and steel	0.63	0.62	71	Power-generating machinery and equipment	0.94	0.57						
54	Medicinal and pharmaceutical products	0.33	0.65	51	Organic chemicals	0.64	0.50	67	Iron and steel	0.99	0.47						
51	Organic chemicals	0.56	0.64	61	Leather, leather manufactures, n.e.s., and dressed furskins	0.06	0.30	64	Paper, paperboard and articles of paper pulp, of paper or of paperboard	0.66	0.17						
59	Chemical materials and products, n.e.s.	0.41	0.64	66	Non-metallic mineral manufactures, n.e.s.	0.34	0.29	55	Essential oils and perfume materials; toilet, polishing and cleansing preparations	-0.79	0.14						
63	Cork and wood manufactures (excluding furniture)	0.31	0.60	63	Cork and wood manufactures (excluding furniture)	0.24	-0.03	79	Other transport equipment	0.98	0.08						
62	Rubber manufactures, n.e.s.	0.11	0.43	64	Paper, paperboard and articles of paper pulp, of paper or of paperboard	-0.29	-0.64	73	Metalworking machinery	0.76	-0.10						
71	Power-generating machinery and equipment	0.40	0.41	65	Textile yarn, fabrics, made-up articles, n.e.s., and related products	-0.42	-0.70	57	Plastics in primary forms	0.99	-0.26						
87	Professional, scientific and controlling instruments and apparatus, n.e.s.	0.21	0.40	79	Other transport equipment	0.04	-0.71	52	Inorganic chemicals	0.20	-0.29						
10 product groups with lowest RCA index (SITC)																	
84	Articles of apparel and clothing accessories	-0.63	-0.57	54	Medicinal and pharmaceutical products	-0.96	-0.99	85	Footwear	-1.00	-1.00						
73	Metalworking machinery	-0.51	-0.40	78	Road vehicles (including air-cushion vehicles)	-0.82	-0.98	84	Articles of apparel and clothing accessories	-1.00	-1.00						
85	Footwear	-0.46	-0.28	85	Footwear	-0.94	-0.98	83	Travel goods, handbags and similar containers	-1.00	-1.00						
65	Textile yarn, fabrics, made-up articles, n.e.s., and related products	-0.25	-0.14	83	Travel goods, handbags and similar containers	-0.95	-0.98	81	Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	-0.88	-1.00						
82	Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	-0.54	-0.12	75	Office machines and automatic data-processing machines	-0.96	-0.98	75	Office machines and automatic data-processing machines	-0.90	-0.99						
52	Inorganic chemicals	0.08	-0.10	74	General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	-0.82	-0.97	78	Road vehicles (including air-cushion vehicles)	0.51	-0.99						
79	Other transport equipment	0.24	-0.08	58	Plastics in non-primary forms	-0.94	-0.97	82	Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	-0.97	-0.99						
67	Iron and steel	-0.25	-0.07	72	Machinery specialised for particular industries	-0.87	-0.95	58	Plastics in non-primary forms	-0.98	-0.98						
81	Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	-0.20	0.04	55	Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	-0.87	-0.95	54	Medicinal and pharmaceutical products	-0.87	-0.98						
74	General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	0.02	0.06	81	Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	-0.94	-0.94	65	Textile yarn, fabrics, made-up articles, n.e.s., and related products	-0.79	-0.97						
Average for manufactured products		0.01	0.14	Average for manufactured products		-0.33	-0.63	Average for manufactured products		0.31	-0.59						

Source: UN Comtrade database, SITC Rev. 3, author's calculations. Accessed June 2008. The grey area shows strong revealed advantages of Russia.



Furthermore, concerning Russia-EU15 and Russia-China trade, the index is strongly positive (over 0.50) for a very small number of product groups. These are mostly chemicals, fertilisers and iron and steel. Also, we note an advantage in power-generating machinery and equipment in Russian-Chinese trade (however being in decline in 2006). Further, within the Russia-CIS trade, Russia is advantaged in office machines and automatic data-processing machines and in medicinal and pharmaceutical products.

On average, Russia's RCA index is slightly improving for the Russia-CIS trade (the average RCA is 0.14 in 2006 as compared to 0.01 in 2000). That is consistent with the increasing positive trade balance of Russia. For the Russia-EU15 and Russia-China relations, we observe the opposite tendency, that is, the decline of the average RCA index in 2000-2006. The decline is especially strong for the Russian-Chinese relations, the RCA passing on the negative side (from +0.31 to -0.59). As for the Russia-EU15 trade, the average RCA is negative while the disadvantage is reinforcing (the RCA decreases from -0.33 to -0.63).

Intra-industry trade analysis is necessary to understand the nature of the trade where the RCA index is close to zero.

### 3.3. Intra-industry trade

A country's foreign trade may be divided into two parts: i) the "equilibrated" part (the intra-industry trade) and ii) the balance, which reflects inter-industry trade. While the latter can be explained by the traditional theories of international trade (comparative advantage), the intra-industry trade reflects the situation of imperfect competition analysed within modern theories of international trade.

In order to measure the intra-industry trade, we calculate the Grubel-Lloyd index. The GL index is constructed as follows (3):

$$GL = \left[ \frac{(X_{ijk} + M_{ijk}) - |X_{ijk} - M_{ijk}|}{(X_{ijk} + M_{ijk})} \right] * 100 \quad , \quad \text{or}$$

$$GL = \left[ 1 - \frac{|X_{ijk} - M_{ijk}|}{(X_{ijk} + M_{ijk})} \right] * 100 \quad (3)$$

*X – exports, M – imports, i-product (industry), j, k – trading partners.*

The intra-industry trade is therefore defined as the difference between the total trade ( $X_{ik} + M_{ik}$ ) and the net exports (imports)  $|X_{ik} - M_{ik}|$ , which reflect the intra-industry part of the trade flows. The index varies between 0 (zero intra-industry trade for the industry  $i$ ) and 100 (all the trade within the industry  $i$  is intra-industry).

The results show that the intra-industry trade measured by the GL index is relatively stronger for the Russia-CIS trade than for the Russia-EU15 or the Russia-China trade. While the intra-industry trade is relatively stable for the Russia-CIS trade, we note a significant decline within the Russia-EU15 trade during 2000-2006, after a rebound in 1998-2000, which can be explained by the decrease in Russia's imports from the EU15 after the 1998 crisis. Finally, the intra-industry component within Russian-Chinese trade tends to decline, but the 2006 data shows a possibility of a rebound (Table 5).

**Table 5. Intra-industry trade of manufactured products in 2000-2006**

<b>Grubel Lloyd index</b> <i>SITC Rev. 3, 2 digit, average weighted by the trade value</i>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Russia-CIS	80.05	78.89	80.44	81.86	83.48	81.15	77.80	78.73	79.33
Russia-EU15	24.72	38.26	34.46	27.26	22.34	21.51	18.60	17.55	16.79
Russia-China	18.09	14.66	16.80	16.71	14.52	13.73	11.19	11.58	14.32

*Source: UN Comtrade database, SITC Rev. 3, author's calculations. Accessed June 2008.*

Within the Russia-CIS trade, the intra-industry trade is relatively more intensive for capital goods and semi-products. In 2006, the intra-industry trade is particularly strong (GL index more than 90%, in declining order) for:

SITC 81: Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.;

SITC 74: General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.;

SITC 77: Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment);

SIC 67: Iron and steel;

SITC 57: Plastics in primary forms;

SITC 64: Paper, paperboard and articles of paper pulp, of paper or of paperboard;

SITC 79: Other transport equipment;

SITC 72: Machinery specialised for particular industries.

The trade of consumption goods plays a limited role in the Russia-CIS intra-industry trade. The dominance of capital goods in intra-industry trade could testify to a reconstitution

of industrial infrastructures in the CIS space. However, the volumes of manufactured trade remain quite limited.

As for the Russia-EU15 trade, the GL index is over 90% only for the group SITC 63: Cork and wood manufactures (excluding furniture).

Within the Russian-Chinese trade, the GL index surpasses 90% for SITC 79: Other transport equipment and SITC 73: Metalworking machinery. For both of these groups, we observe a sharp decline in Russian comparative advantages.

## **4. Dynamics of exports and imports by trade partner**

### **4.1. Russia-CIS trade**

Table 6 presents the dynamic structure of the Russian trade with the CIS (ranked by the growth ratio 2006 to 1998). First of all, one can note a strong increase in exports for most of the product groups. On average, the exports increased by a factor of 3.6 between 1998 and 2006. Among the groups contributing to a considerable part of manufactured exports, we should note the following:

The exports of road vehicles (SITC 78) experienced a five-fold increase between 1998 and 2006, contributing to 13.1% of Russian manufactured exports towards the CIS in 2006. The exports of road vehicles are mainly composed of motor vehicles for the transport of goods and special-purpose motor vehicles (SITC 782), motor cars and other motor vehicles principally designed for the transport of persons (SITC 781), and parts and accessories of the motor vehicles (SITC 784), which comprise respectively 36.5%, 28.0% and 24.2% of the exports of road vehicles in 2006. The exports of lorries (SITC 782) increased in value by a factor of 6.5, and the exports of vehicles (SITC 781) augmented by a factor of 4.7 between 1998 and 2006. However, an important part of this dynamic is explained by price factors. So, in 2006, according to the Russian Ministry of Economic Development and Trade (Minekonomrazvitia, 2007), Russian automobile exports towards the CIS increased in value by 21.4% for cars and by 43.4% for lorries. Measured in quantities, the exports of cars increased only by 3.7%, while the exports of lorries increased by 17.9%.

The exports of iron and steel have increased in value by a factor of 5, reaching 18.5% of the value of Russian manufactured exports towards the CIS in 2006. However, the rapid

increase of Chinese steel production and the growth of internal energy prices in Russia could render the competition in this sector more acute.

Machinery exports accounted for about 23% of Russian manufactured exports to the CIS in 2006. The growth rates are close to or less than the average for all manufactured products, but are still significant (ranging from a 2 to 3.5-times increase between 1998 and 2006 depending on the product group). The main items in the Russian machinery exports towards the CIS are SITC 71: Power generating machinery and equipment; SITC 74: General industrial machinery and equipment; SITC 77: Electrical machinery, apparatus and appliances; SITC 79: Other transport equipment and SITC 72: Machinery specialised for particular industries. Each of them contributes about 4-6% of Russia's manufactured exports towards the CIS.

The fact of continued growth in machinery exports lets us suggest a gradual reconstitution of economic (and also political) ties in the post-Soviet space. In fact, the exports of industrial equipment could provide the basis for the restoration of strong and durable links between the productive structures of the CIS countries under the Russian leadership. However, Russia hasn't succeeded in maintaining its role as the main supplier of machinery and transport equipment for the post-Soviet space. Russia's largest CIS partners, Belarus, Ukraine and Kazakhstan, reported an increase between 2000 and 2006 in imports of machinery and transport equipment (SITC 7) by 3.2; 5.3; and 5.3 times respectively. At the same time, the share of Russia in total imports of machinery and transport equipment (SITC 7) declined from 44% to 28% for Belarus, from 33% to 20% for Ukraine and from 38% to 22% for Kazakhstan.<sup>8</sup> That means that Russia is gradually losing its role as the principal supplier of machinery and transport equipment for the CIS. Further, the scope of economic partnership within the CIS is limited by its political disintegration.

On the imports side, the value of manufactured imports increased by a factor of 2.5 in 2006 as compared to 1998.

The imports of transport vehicles and equipment registered a strong increase. The imports of SITC 79: Other transport equipment have increased by a factor of 7.3 in 2006 as compared to 1998, reaching 7.6% of Russian manufactured imports from the CIS in 2006. However, the imports of SITC 78: Road vehicles (which account for about 10% of imports) have grown more slowly. In 2006, the imports of road vehicles constituted about 2.2 times the value of imports of 1998. A particularly strong increase in imports occurs in 2006. In absolute terms, according to the Russian Ministry of Economic Development and Trade

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<sup>8</sup> UN Comtrade, data reported by Belarus, Ukraine and Kazakhstan, SITC Rev.2. Accessed October 2007.

(Minekonomrazvitia, 2007), in 2006, the imports of cars (in physical quantities) increased by 82.7% and imports of lorries augmented by 7.1%.

SITC 67: Iron and steel is dominant in imports of manufactured products (28% of manufactured imports in 2006, increase in value by 3.3 times in 2006 as compared to 1998).

The part of machinery in manufactured imports from the CIS is comparable to the Russian exports structure (SITC 74: General industrial machinery and equipment, nes, and parts of, nes comprises 6.9% of manufactured imports in 2006; SITC 77: Electric machinery, apparatus and appliances accounts for 6.8%; SITC 72: Machinery specialised for particular industries constitutes 4.5%; and SITC 71: Power generating machinery and equipment 3.6%). However, the growth rates are slightly more moderate than for the exports.

**Table 6. Evolution of Russian trade with CIS by product groups, 1998=100%**

Russian exports to the CIS (SITC Rev 3 product groups)	2000	2005	2006	Share of manuf exports 2006	Russian imports from the CIS (SITC Rev.3 product groups)	2000	2005	2006	Share of manuf imports 2006
55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	303	1256	1682	2.7	58 Plastics in non-primary forms	226	605	881	1.0
82 Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	175	703	1082	0.9	79 Other transport equipment	97	598	729	7.6
56 Fertilisers (other than those of group 272)	118	539	1022	1.6	57 Plastics in primary forms	150	308	466	2.1
83 Travel goods, handbags and similar containers	158	779	839	0.0	64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	164	322	393	3.8
63 Cork and wood manufactures (excluding furniture)	108	482	693	1.6	89 Miscellaneous manufactured articles, n.e.s.	142	270	357	2.1
58 Plastics in non-primary forms	161	456	676	1.2	67 Iron and steel	110	252	331	28.1
66 Non-metallic mineral manufactures, n.e.s.	127	395	560	4.9	69 Manufactures of metals, n.e.s.	107	243	314	3.9
81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	143	416	558	0.6	74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	107	233	290	6.9
67 Iron and steel	114	391	498	18.5	63 Cork and wood manufactures (excluding furniture)	95	240	287	0.5
78 Road vehicles (including air-cushion vehicles)	131	379	497	13.1	72 Machinery specialised for particular industries	122	204	266	4.5
57 Plastics in primary forms	176	423	453	1.8	77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	100	197	246	6.8
89 Miscellaneous manufactured articles, n.e.s.	135	327	436	2.4	66 Non-metallic mineral manufactures, n.e.s.	108	184	240	2.8
69 Manufactures of metals, n.e.s.	96	273	357	4.8	73 Metalworking machinery	113	217	224	1.1
77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	106	248	353	5.9	78 Road vehicles (including air-cushion vehicles)	87	136	216	10.0
72 Machinery specialised for particular industries	110	277	337	4.0	55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	110	147	213	0.6
87 Professional, scientific and controlling instruments and apparatus, n.e.s.	130	254	322	1.7	83 Travel goods, handbags and similar containers	127	208	212	0.0
64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	125	266	314	3.3	87 Professional, scientific and controlling instruments and apparatus, n.e.s.	113	172	185	0.9
74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	99	236	294	5.9	52 Inorganic chemicals	85	143	183	2.8
54 Medicinal and pharmaceutical products	128	237	282	1.2	84 Articles of apparel and clothing accessories	93	127	182	1.3
61 Leather, leather manufactures, n.e.s., and dressed furskins	154	208	280	0.2	81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	72	127	175	0.7
51 Organic chemicals	136	272	280	1.9	82 Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	76	143	175	1.6
79 Other transport equipment	70	196	275	4.9	71 Power-generating machinery and equipment	91	134	167	3.6
71 Power-generating machinery and equipment	141	235	268	6.5	65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	127	132	156	2.6
84 Articles of apparel and clothing accessories	100	252	234	0.3	51 Organic chemicals	89	132	143	0.6
62 Rubber manufactures, n.e.s.	88	178	222	3.1	61 Leather, leather manufactures, n.e.s., and dressed furskins	106	95	97	0.1
59 Chemical materials and products, n.e.s.	108	183	221	1.5	88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	104	74	93	0.1
65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	140	195	216	1.5	59 Chemical materials and products, n.e.s.	81	64	86	0.4
73 Metalworking machinery	80	188	212	0.4	76 Telecommunications and sound-recording and reproducing apparatus and equipment	92	93	81	0.4
53 Dyeing, tanning and colouring materials	123	167	205	0.8	62 Rubber manufactures, n.e.s.	64	65	80	1.6
52 Inorganic chemicals	126	165	188	1.8	53 Dyeing, tanning and colouring materials	106	89	73	0.5
88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	147	157	174	0.1	54 Medicinal and pharmaceutical products	70	67	65	0.3
76 Telecommunications and sound-recording and reproducing apparatus and equipment	93	147	169	0.4	85 Footwear	80	38	51	0.4
75 Office machines and automatic data-processing machines	97	63	85	0.2	75 Office machines and automatic data-processing machines	43	33	42	0.0
85 Footwear	79	64	77	0.2	56 Fertilisers (other than those of group 272)	17	17	14	0.1
<b>Average for manufactured products</b>	<b>116</b>	<b>285</b>	<b>365</b>	<b>100.0</b>	<b>Average for manufactured products</b>	<b>101</b>	<b>191</b>	<b>247</b>	<b>100.0</b>

Source : UN Comtrade Database, SITC Rev.3, author's calculations. Accessed June 2008.

## 4.2. Russia - EU15 trade

The structure of the Russian exports of manufactured products towards the EU15 (see Table 7) is clearly oriented towards goods in the first stages of processing:

SITC 67: Iron and steel provides about 38% of manufacturing exports in 2006 (that is, the increase in value by a factor of 4.6 in 2006 as compared to 1998);

Another important group is composed of chemicals and fertilisers (SITC 51: Organic chemicals account for 10.7% of manufactured exports in 2006; SITC 52: Inorganic chemicals for 9.1% and SITC 56: Fertilisers for 4.7%);

Finally, SITC 66: Non-metallic mineral manufactures provide about 13% of Russian manufactured exports to the EU15 in 2006.

On the import side, the growth was relatively more significant than for the exports. On average, the manufactured imports from the EU15 increased by a factor of 3.6 in 2006 as compared to 1998, while the exports increased by only 2.6 times during the same period.

Machinery stands for about 30% of the Russian manufactured imports from the EU15. Notably, the main imported products in this group are SITC 74: General industrial machinery and equipment (10.2% of manufactured imports in 2006), SITC 72: Machinery specialised for particular industries (9.2% in 2006), SITC 77: Electric machinery, apparatus and appliances (7% of manufactured imports in 2006). The growth rates are close to or inferior to the average growth rates of the manufactured imports from the EU15.

The imports of other final products and consumption products demonstrate very high growth rates. The imports of SITC 78: Road vehicles registered a spectacular increase (7-fold during the analysed period), reaching approximately 14% of the total manufactured imports from the EU15. Further, SITC 76: Telecommunications, sound recording and reproducing equipment accounts for 6.4% of manufactured imports (increase by a factor of 4.5). SITC 54: Medicinal and pharmaceutical products accounts for 6.5% of manufactured imports in 2006 (increase by a factor of 5.5 in 2006 as compared to 1998).

The rapid growth of imports of final products testifies to the poor competitiveness of Russian domestic producers, who fail to compete effectively with imports.



**Table 7. Evolution of Russian trade with the EU15 by product groups, 1998=100%**

Russian exports to EU15	2000	2005	2006	Share of manuf exports 2006	Russian imports from EU15	2000	2005	2006	Share of manuf imports 2006
62 Rubber manufactures, n.e.s.	202	802	1411	0.6	78 Road vehicles (including air-cushion vehicles)	68	417	719	13.8
58 Plastics in non-primary forms	467	675	1141	0.1	57 Plastics in primary forms	118	485	708	2.1
76 Telecommunications and sound-recording and reproducing apparatus and equipment	117	147	785	1.4	73 Metalworking machinery	78	443	587	1.8
81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	170	480	772	0.1	54 Medicinal and pharmaceutical products	100	372	549	6.5
61 Leather, leather manufactures, n.e.s., and dressed furskins	203	608	707	1.4	83 Travel goods, handbags and similar containers	97	357	530	0.2
67 Iron and steel	129	412	464	37.9	62 Rubber manufactures, n.e.s.	103	390	526	0.9
51 Organic chemicals	201	392	418	10.7	75 Office machines and automatic data-processing machines	134	408	454	3.5
82 Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	166	363	344	0.9	76 Telecommunications and sound-recording and reproducing apparatus and equipment	83	479	451	6.4
55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	200	418	323	0.4	53 Dyeing, tanning and colouring materials	101	317	418	1.8
53 Dyeing, tanning and colouring materials	70	151	322	0.4	79 Other transport equipment	51	180	412	1.5
77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	325	265	284	1.4	52 Inorganic chemicals	87	253	393	0.4
75 Office machines and automatic data-processing machines	145	246	268	0.2	67 Iron and steel	102	252	378	2.0
87 Professional, scientific and controlling instruments and apparatus, n.e.s.	296	184	258	0.5	74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	71	281	361	10.2
63 Cork and wood manufactures (excluding furniture)	113	222	248	2.6	84 Articles of apparel and clothing accessories	81	257	346	3.0
56 Fertilisers (other than those of group 272)	108	234	240	4.7	56 Fertilisers (other than those of group 272)	48	235	341	0.0
69 Manufactures of metals, n.e.s.	403	193	236	2.3	55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	82	270	341	3.1
72 Machinery specialised for particular industries	152	221	234	1.0	71 Power-generating machinery and equipment	58	251	339	1.9
52 Inorganic chemicals	111	193	199	9.1	72 Machinery specialised for particular industries	76	252	337	9.2
64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	136	184	188	2.8	58 Plastics in non-primary forms	79	249	333	1.7
71 Power-generating machinery and equipment	161	172	170	1.1	69 Manufactures of metals, n.e.s.	65	233	322	3.3
88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	90	174	166	0.1	77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	66	251	310	7.0
83 Travel goods, handbags and similar containers	60	148	158	0.0	64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	88	244	305	2.9
66 Non-metallic mineral manufactures, n.e.s.	49	156	154	13.2	59 Chemical materials and products, n.e.s.	84	249	305	2.4
65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	157	168	150	0.9	51 Organic chemicals	92	250	296	0.8
74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	186	119	143	0.7	66 Non-metallic mineral manufactures, n.e.s.	84	233	292	1.6
59 Chemical materials and products, n.e.s.	94	106	142	1.0	87 Professional, scientific and controlling instruments and apparatus, n.e.s.	86	194	278	2.5
57 Plastics in primary forms	107	130	138	0.7	81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	60	177	265	0.9
79 Other transport equipment	99	218	125	1.1	88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	116	215	243	0.5
89 Miscellaneous manufactured articles, n.e.s.	99	96	119	0.9	89 Miscellaneous manufactured articles, n.e.s.	65	194	234	3.5
73 Metalworking machinery	138	102	111	0.3	65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	97	173	213	1.2
78 Road vehicles (including air-cushion vehicles)	84	75	101	0.7	63 Cork and wood manufactures (excluding furniture)	55	162	207	0.6
85 Footwear	43	64	52	0.0	61 Leather, leather manufactures, n.e.s., and dressed furskins	92	170	198	0.2
84 Articles of apparel and clothing accessories	91	62	48	0.6	82 mattresses, mattress supports, cushions and similar stuffed furnishings	67	147	190	1.5
54 Medicinal and pharmaceutical products	44	18	31	0.1	85 Footwear	62	130	189	0.9
<b>Average for manufactured products</b>	<b>121</b>	<b>238</b>	<b>258</b>	<b>100.0</b>	<b>Average for manufactured products</b>	<b>78</b>	<b>276</b>	<b>366</b>	<b>100.0</b>

Source : UN Comtrade Database, SITC Rev.3, author's calculations. Accessed June 2008.



### 4.3. Russia - China trade

One of the most outstanding features of Russian-Chinese relations is a high dispersion of growth rates for imports and exports of different product groups (Table 8). The growth rates by product group varied between a 1191-fold increase and a 90% decrease for the exports versus a 2-fold to 606-fold increase on the imports side in 2006 as compared to 1998. Partially it can be explained by the poor quality of the statistical data available, but also by a rapidly increasing scope of economic ties.

Russia's manufactured exports towards China are concentrated in three main domains:

1) Chemicals and fertilisers account for about 48% of manufactured exports. The exports of SITC 51: Organic chemicals increased by more than seven times between 1998 and 2006, reaching 18.2% of manufactured exports. SITC 56: Fertilisers accounted for more than 28% of exports in 2006 (increase by a factor of 1.8 as compared to 1998).

2) SITC 67: Iron and steel provides about 21.8% of Russian manufactured exports to China.

3) SITC 71: Power generating machinery and equipment comprises 9.6% of manufactured exports, but the value of exports decreased considerably in the post-1998 crisis years.

On the imports side, the growth rates are very strong. While the value of Russian exports increased by 1.4 times in 1998-2006, Russia's imports from China registered a more than 12-fold increase. Russia imports primarily final goods, that is :

- The category durable goods accounts for an important share of Russian manufactured imports from China (SITC 76: Telecommunications and sound-recording and reproducing apparatus and equipment makes up 14.2% of manufactured imports from China in 2006; SITC 75: Office machines and automatic data-processing machines represents about 7.4% of manufactured imports from China in 2006). One should note very strong growth rates, including in 2006. In absolute terms, the imports of telecommunications and sound-recording and reproducing apparatus and equipment (SITC 76) increased from USD million 24.4 to USD billion 1.9 during 1998-2006. The imports of office machines (SITC 75) passed from USD million 7.3 to USD billion 1.0 during the same period.

- Another important product group is composed of consumption goods, like SITC 84: Articles of apparel and clothing accessories (17.7% of manufactured imports from China in 2006); SITC 85: Footwear (8.2% of manufactured imports from China in 2006). The imports have been increasing rapidly in recent years.

-Finally, the imports of SITC 77: Electric machinery, apparatus and appliances accounted for about 8.8% of Russia's manufactured imports from China in 2006.

**Table 8. Evolution of Russian trade with China by product groups, 1998=100%**

Russian exports to China	2000	2005	2006	Share of manuf exports 2006	Russian imports from China	2000	2005	2006	Share of manuf imports 2006
55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	2254	110521	119104	1.0	57 Plastics in primary forms	311	19420	60667	1.3
63 Cork and wood manufactures (excluding furniture)	339	2666	4752	0.7	78 Road vehicles (including air-cushion vehicles)	153	5668	14599	3.6
82 Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	332	823	3328	0.0	75 Office machines and automatic data-processing machines	273	7323	13425	7.4
75 Office machines and automatic data-processing machines	513	1179	1621	0.1	73 Metalworking machinery	216	7436	12458	0.3
59 Chemical materials and products, n.e.s.	195	1271	1499	0.6	76 Telecommunications and sound-recording and reproducing apparatus and equipment	146	4192	7675	14.2
58 Plastics in non-primary forms	154	604	1263	0.0	77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	189	5292	7620	8.8
88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	494	414	1031	0.1	81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	181	2827	4789	1.6
51 Organic chemicals	314	629	706	18.2	74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	128	2180	4275	4.0
65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	613	479	643	0.3	67 Iron and steel	64	1068	3717	2.0
61 Leather, leather manufactures, n.e.s., and dressed furskins	144	931	581	0.1	63 Cork and wood manufactures (excluding furniture)	105	2449	3544	0.5
76 Telecommunications and sound-recording and reproducing apparatus and equipment	88	501	346	2.6	72 Machinery specialised for particular industries	204	1409	3087	2.1
66 Non-metallic mineral manufactures, n.e.s.	256	350	293	0.3	56 Fertilisers (other than those of group 272)	435	2198	2300	0.0
74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	66	171	183	0.9	82 Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	68	1336	2120	0.8
56 Fertilisers (other than those of group 272)	75	203	179	28.3	83 Travel goods, handbags and similar containers	199	920	2045	1.5
77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	33	180	175	2.0	69 Manufactures of metals, n.e.s.	102	1168	1979	4.2
64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	153	160	161	2.7	87 Professional, scientific and controlling instruments and apparatus, n.e.s.	82	731	1482	1.1
53 Dyeing, tanning and colouring materials	68	209	137	0.0	62 Rubber manufactures, n.e.s.	153	725	1369	0.4
71 Power-generating machinery and equipment	34	87	137	9.6	66 Non-metallic mineral manufactures, n.e.s.	108	872	1348	3.2
52 Inorganic chemicals	62	115	136	1.6	58 Plastics in non-primary forms	106	875	1235	0.9
67 Iron and steel	139	261	125	21.8	52 Inorganic chemicals	201	891	1205	0.7
62 Rubber manufactures, n.e.s.	90	77	122	0.0	85 Footwear	196	803	1148	8.2
57 Plastics in primary forms	277	163	114	2.9	55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	214	662	1005	0.2
85 Footwear	2	63	87	0.0	65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	100	685	861	5.3
84 Articles of apparel and clothing accessories	225	86	57	0.0	59 Chemical materials and products, n.e.s.	101	619	781	0.8
87 Professional, scientific and controlling instruments and apparatus, n.e.s.	32	62	44	1.2	88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	151	383	721	0.5
69 Manufactures of metals, n.e.s.	12	25	37	1.3	51 Organic chemicals	180	481	679	1.0
72 Machinery specialised for particular industries	35	15	27	0.2	89 Miscellaneous manufactured articles, n.e.s.	119	499	672	5.7
79 Other transport equipment	113	54	27	1.7	61 Leather, leather manufactures, n.e.s., and dressed furskins	123	338	588	0.1
54 Medicinal and pharmaceutical products	75	12	19	0.0	71 Power-generating machinery and equipment	15	125	568	0.7
73 Metalworking machinery	3	20	19	0.9	84 Articles of apparel and clothing accessories	120	607	502	17.7
78 Road vehicles (including air-cushion vehicles)	157	16	17	0.0	64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	112	259	404	0.5
89 Miscellaneous manufactured articles, n.e.s.	217	19	15	0.5	54 Medicinal and pharmaceutical products	200	254	323	0.2
81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	21	18	12	0.0	53 Dyeing, tanning and colouring materials	39	158	243	0.2
83 Travel goods, handbags and similar containers*	-	-	-	0.0	79 Other transport equipment	12	41	199	0.4
<b>Average for manufactured products</b>	<b>104</b>	<b>172</b>	<b>137</b>	<b>100.0</b>	<b>Average for manufactured products</b>	<b>126</b>	<b>875</b>	<b>1240</b>	<b>100.0</b>

Source : UN Comtrade Database, SITC Rev.3, author's calculations. Accessed June 2008.

\* - zero exports in 1998.

## 5. Conclusion

Russia is globally disadvantaged in manufactures trade and the trade balance for manufactures is rapidly deteriorating. However, when specifying Russia's trade relations according to its main trading partners (the CIS, the EU, China), we note a significant differentiation of specialisation patterns. Russia possesses revealed comparative advantages in manufactures towards the CIS while being disadvantaged in the trade with the EU and China. However, Russia possesses strong potential in order to advance its international specialisation, notably in terms of its human capital or its technological potential. Until now, Russia hasn't managed to capitalise on this potential. In consequence, its benefits from the international trade are limited.

In order to realise its competitive potential, Russia has to face the competition of foreign oligopolistic firms which benefit from numerous advantages like the control of upstream markets, strong financial capacities, governmental support etc. One can suggest strong opportunities for industrial diversification within the CIS while benefiting from industrial links inherited from the Soviet period. However, in economic terms, Russia is losing the CIS markets *vis-à-vis* European and Asian countries. Moreover, the scope of economic partnership within the CIS is limited given its increasing political disintegration.

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# Annex

## 1. Revealed comparative advantages: Russia-world trade

Product group (SITC)	1998	1999	2000	2001	2002	2003	2004	2005	2006
56 Fertilisers (other than those of group 272)	0.99	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99
51 Organic chemicals	0.38	0.48	0.63	0.55	0.58	0.57	0.61	0.59	0.58
67 Iron and steel	0.59	0.63	0.62	0.58	0.69	0.63	0.69	0.64	0.52
52 Inorganic chemicals	0.58	0.57	0.66	0.30	0.21	0.39	0.52	0.46	0.46
61 Leather, leather manufactures, n.e.s., and dressed furskins	0.31	0.05	0.46	0.16	0.58	0.63	0.58	0.49	0.45
63 Cork and wood manufactures (excluding furniture)	0.29	0.55	0.56	0.42	0.40	0.31	0.35	0.39	0.31
66 Non-metallic mineral manufactures, n.e.s.	0.52	-0.17	-0.16	0.40	0.19	0.13	0.16	0.20	0.16
71 Power-generating machinery and equipment	0.29	0.51	0.49	0.48	0.43	0.42	0.35	0.21	0.12
79 Other transport equipment	0.04	0.31	0.31	0.36	0.55	0.60	0.53	-0.05	-0.13
62 Rubber manufactures, n.e.s.	-0.11	-0.16	-0.08	-0.07	-0.04	-0.02	-0.16	-0.22	-0.24
64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	-0.02	0.10	0.13	-0.03	-0.14	-0.21	-0.19	-0.22	-0.28
69 Manufactures of metals, n.e.s.	-0.12	0.49	0.53	0.13	-0.13	-0.21	-0.29	-0.30	-0.30
82 Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	-0.68	-0.32	-0.34	-0.47	-0.57	-0.49	-0.45	-0.47	-0.52
87 Professional, scientific and controlling instruments and apparatus, n.e.s.	-0.39	-0.11	-0.14	0.04	-0.19	-0.35	-0.40	-0.41	-0.55
59 Chemical materials and products, n.e.s.	-0.24	-0.37	-0.30	-0.41	-0.48	-0.47	-0.52	-0.59	-0.57
55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	-0.86	-0.62	-0.50	-0.66	-0.68	-0.66	-0.64	-0.61	-0.61
57 Plastics in primary forms	0.18	0.26	0.31	0.04	-0.18	-0.32	-0.28	-0.50	-0.62
65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	-0.30	-0.30	-0.29	-0.39	-0.34	-0.44	-0.45	-0.50	-0.62
89 Miscellaneous manufactured articles, n.e.s.	-0.31	0.24	0.09	-0.38	-0.21	-0.35	-0.45	-0.61	-0.63
81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	-0.75	-0.79	-0.62	-0.68	-0.74	-0.70	-0.67	-0.67	-0.65
77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	-0.51	-0.17	-0.18	-0.37	-0.47	-0.60	-0.63	-0.64	-0.66
53 Dyeing, tanning and colouring materials	-0.68	-0.40	-0.50	-0.62	-0.70	-0.64	-0.75	-0.75	-0.70
74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	-0.68	-0.53	-0.30	-0.33	-0.57	-0.56	-0.57	-0.68	-0.71
73 Metalworking machinery	-0.30	-0.27	0.17	-0.54	-0.58	-0.65	-0.69	-0.67	-0.74
78 Road vehicles (including air-cushion vehicles)	-0.44	-0.22	-0.13	-0.39	-0.36	-0.55	-0.63	-0.70	-0.77
88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	-0.64	-0.36	-0.47	-0.61	-0.69	-0.70	-0.68	-0.67	-0.79
72 Machinery specialised for particular industries	-0.77	-0.62	-0.57	-0.58	-0.69	-0.73	-0.71	-0.74	-0.80
58 Plastics in non-primary forms	-0.87	-0.75	-0.71	-0.77	-0.83	-0.80	-0.80	-0.82	-0.81
76 Telecommunications and sound-recording and reproducing apparatus and equipment	-0.71	-0.54	-0.73	-0.76	-0.79	-0.74	-0.77	-0.84	-0.84
84 Articles of apparel and clothing accessories	-0.04	0.40	0.08	-0.25	-0.47	-0.47	-0.59	-0.66	-0.86
83 Travel goods, handbags and similar containers	-0.82	-0.79	-0.92	-0.96	-0.96	-0.96	-0.94	-0.86	-0.89
75 Office machines and automatic data-processing machines	-0.67	-0.55	-0.67	-0.87	-0.77	-0.85	-0.87	-0.91	-0.91
54 Medicinal and pharmaceutical products	-0.85	-0.79	-0.86	-0.89	-0.85	-0.84	-0.88	-0.91	-0.93
85 Footwear	-0.41	-0.26	-0.62	-0.82	-0.85	-0.85	-0.84	-0.91	-0.95
<b>Average for manufactured products</b>	<b>-0.09</b>	<b>0.09</b>	<b>0.13</b>	<b>-0.04</b>	<b>-0.08</b>	<b>-0.12</b>	<b>-0.11</b>	<b>-0.22</b>	<b>-0.34</b>

Source: UN Comtrade Database, SITC Rev.3., author's calculations. Accessed June 2008.

## 2. Discrepancies in mirror statistics

		Russian exports / Partner's imports										Russian imports/ Partner's exports											
Product group (SITC)		1998	1999	2000	2001	2002	2003	2004	2005	2006	Average (Not weighted)	SITC	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average (Not weighted)	
Russia-CIS trade																							
5	Chemicals and related products, n.e.s.	0.49	0.45	0.59	0.51	0.61	0.60	0.65	0.75	0.72	0.60	5	0.33	0.36	0.74	0.50	0.53	0.57	0.67	0.66	0.73	0.57	
6	Manufactured goods classified chiefly by material	0.58	0.47	0.48	0.53	0.57	0.59	0.59	0.78	0.81	0.60	6	0.69	0.70	0.70	0.71	0.59	0.64	0.68	0.78	0.83	0.70	
68	Non-ferrous metals	0.34	0.31	0.29	0.35	0.43	0.39	0.33	0.53	0.57	0.39	68	1.62	1.81	1.02	1.43	0.82	0.78	0.93	0.98	1.09	1.16	
7	Machinery and transport equipment	0.65	0.60	0.63	0.79	0.73	0.79	0.75	0.90	0.87	0.75	7	0.47	0.40	0.46	0.47	0.47	0.50	0.54	0.62	0.62	0.51	
8	Miscellaneous manufactured articles	0.86	0.60	0.55	0.64	0.57	0.60	0.59	0.77	0.79	0.66	8	0.25	0.25	0.41	0.31	0.23	0.25	0.26	0.35	0.38	0.30	
Total manufactures		0.62	0.54	0.57	0.65	0.65	0.68	0.67	0.83	0.83	0.67	Total	0.49	0.45	0.56	0.53	0.49	0.53	0.57	0.66	0.69	0.55	
Russia-EU15 trade																							
5	Chemicals and related products, n.e.s.	0.64	0.64	0.92	0.76	0.68	0.67	0.69	0.72	0.75	0.72	5	0.94	0.92	0.86	0.84	0.85	0.85	0.81	0.87	0.87	0.87	
6	Manufactured goods classified chiefly by material	1.12	1.11	0.98	1.23	1.04	0.90	0.88	0.90	0.93	1.01	6	0.75	0.78	0.67	0.69	0.74	0.66	0.65	0.68	0.71	0.70	
68	Non-ferrous metals	1.24	1.27	1.05	1.03	1.21	1.07	0.84	0.93	0.95	1.07	68	0.93	0.75	0.63	0.73	0.77	0.77	0.66	0.70	0.67	0.73	
7	Machinery and transport equipment	1.84	2.43	2.70	2.38	1.53	2.30	1.53	1.51	1.24	1.94	7	0.71	0.78	0.60	0.59	0.62	0.56	0.55	0.60	0.67	0.63	
8	Miscellaneous manufactured articles	1.27	1.74	1.53	1.26	1.16	0.83	0.80	0.90	0.72	1.13	8	0.46	0.42	0.40	0.42	0.39	0.39	0.37	0.34	0.38	0.40	
Total manufactures		0.95	1.00	1.07	1.28	0.88	0.84	0.88	0.87	0.88	0.96	Total	0.69	0.73	0.62	0.62	0.63	0.59	0.57	0.61	0.66	0.64	
Russia-China trade																							
5	Chemicals and related products, n.e.s.	0.74	0.71	0.65	0.71	0.65	0.68	0.60	0.71	0.91	0.71	5	2.77	1.93	1.52	1.26	1.17	1.03	0.86	0.86	0.92	1.37	
6	Manufactured goods classified chiefly by material	1.02	0.86	0.86	0.50	0.81	0.69	0.79	0.74	1.34	0.84	6	1.52	2.64	1.43	1.32	1.15	0.94	0.74	0.57	0.66	1.22	
68	Non-ferrous metals	0.01	0.28	0.61	0.46	0.68	0.51	0.40	0.25	0.62	0.42	68	7.23	7.13	1.75	0.66	1.11	1.42	0.54	0.67	0.48	2.33	
7	Machinery and transport equipment	0.73	1.23	2.39	0.25	0.56	0.91	1.34	2.88	5.26	1.73	7	1.78	0.70	0.62	1.13	1.34	1.05	1.35	1.39	1.52	1.21	
8	Miscellaneous manufactured articles	1.35	2.29	4.74	1.17	2.47	2.48	4.08	3.95	3.38	2.88	8	0.22	0.21	0.17	0.34	0.38	0.28	0.21	0.21	0.40	0.27	
Total manufactures		0.93	1.03	1.16	0.46	0.69	0.80	0.87	0.97	1.51	0.94	Total	0.50	0.48	0.36	0.57	0.66	0.52	0.50	0.53	0.81	0.55	

Source: UN Comtrade Database, SITC Rev.3., author's calculations ; Accessed June 2008.

### 3. Revealed comparative advantages: Russia-CIS trade

Product group (SITC)	1998	1999	2000	2001	2002	2003	2004	2005	2006
56 Fertilisers (other than those of group 272)	-0.39	0.31	0.51	0.69	0.85	0.84	0.88	0.87	0.94
55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	-0.15	0.27	0.34	0.37	0.58	0.59	0.65	0.73	0.71
75 Office machines and automatic data-processing machines	0.41	0.49	0.69	0.56	0.23	0.65	0.62	0.64	0.65
54 Medicinal and pharmaceutical products	0.05	0.33	0.33	0.30	0.41	0.49	0.58	0.59	0.65
51 Organic chemicals	0.40	0.56	0.56	0.50	0.57	0.58	0.62	0.66	0.64
59 Chemical materials and products, n.e.s.	0.28	0.25	0.41	0.45	0.47	0.50	0.61	0.67	0.64
63 Cork and wood manufactures (excluding furniture)	0.25	0.27	0.31	0.21	0.22	0.26	0.37	0.54	0.60
62 Rubber manufactures, n.e.s.	-0.05	-0.06	0.11	0.21	0.46	0.49	0.47	0.42	0.43
71 Power-generating machinery and equipment	0.20	0.32	0.40	0.36	0.29	0.33	0.52	0.45	0.41
87 Professional, scientific and controlling instruments and apparatus, n.e.s.	0.15	0.00	0.21	0.23	0.26	0.32	0.36	0.33	0.40
61 Leather, leather manufactures, n.e.s., and dressed furskins	-0.11	0.00	0.08	0.19	-0.03	0.39	0.44	0.27	0.40
66 Non-metallic mineral manufactures, n.e.s.	-0.01	0.16	0.07	0.07	0.12	0.21	0.29	0.36	0.39
53 Dyeing, tanning and colouring materials	-0.18	-0.16	-0.11	-0.30	0.03	0.14	0.29	0.13	0.32
83 Travel goods, handbags and similar containers	-0.39	-0.38	-0.30	-0.27	-0.12	-0.09	-0.22	0.24	0.27
78 Road vehicles (including air-cushion vehicles)	-0.14	0.10	0.06	0.07	0.18	0.26	0.30	0.35	0.26
69 Manufactures of metals, n.e.s.	0.17	0.14	0.12	0.14	0.16	0.16	0.19	0.23	0.23
58 Plastics in non-primary forms	0.34	0.17	0.18	0.30	0.27	0.36	0.39	0.20	0.21
89 Miscellaneous manufactured articles, n.e.s.	0.11	0.06	0.09	0.22	0.19	0.25	0.28	0.21	0.21
76 Telecommunications and sound-recording and reproducing apparatus and equipment	-0.16	-0.35	-0.15	-0.33	-0.18	-0.07	-0.04	0.07	0.21
88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	-0.11	-0.07	0.07	0.06	0.20	0.30	0.27	0.26	0.20
72 Machinery specialised for particular industries	-0.04	-0.27	-0.09	0.06	0.03	0.04	0.05	0.11	0.08
64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	0.19	0.06	0.06	0.02	0.03	0.01	0.09	0.09	0.08
57 Plastics in primary forms	0.09	0.16	0.17	0.08	0.25	0.31	0.40	0.24	0.07
77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	-0.12	-0.08	-0.09	-0.02	-0.02	0.01	0.05	-0.01	0.06
74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	0.05	0.03	0.02	0.13	-0.04	0.01	0.05	0.06	0.06
81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	-0.50	-0.30	-0.20	-0.15	-0.06	-0.10	-0.04	0.05	0.04
67 Iron and steel	-0.27	-0.25	-0.25	-0.16	0.05	-0.07	-0.04	-0.06	-0.07
79 Other transport equipment	0.39	0.50	0.24	0.10	-0.03	0.12	-0.22	-0.15	-0.08
52 Inorganic chemicals	-0.12	-0.11	0.08	0.33	0.25	0.25	0.17	-0.05	-0.10
82 Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	-0.77	-0.71	-0.54	-0.51	-0.52	-0.45	-0.38	-0.23	-0.12
65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	-0.30	-0.33	-0.25	-0.19	-0.06	-0.08	-0.08	-0.11	-0.14
85 Footwear	-0.46	-0.53	-0.46	-0.37	-0.09	-0.11	-0.21	-0.23	-0.28
73 Metalworking machinery	-0.37	-0.36	-0.51	-0.53	-0.55	-0.51	-0.45	-0.43	-0.40
84 Articles of apparel and clothing accessories	-0.65	-0.68	-0.63	-0.53	-0.42	-0.38	-0.45	-0.41	-0.57
<b>Average for manufactured products</b>	<b>-0.06</b>	<b>-0.01</b>	<b>0.01</b>	<b>0.05</b>	<b>0.11</b>	<b>0.13</b>	<b>0.14</b>	<b>0.14</b>	<b>0.14</b>

Source: UN Comtrade Database, SITC Rev.3., author's calculations. Accessed June 2008.



#### 4. Revealed comparative advantages: Russia-EU15 trade

Product group (SITC)		1998	1999	2000	2001	2002	2003	2004	2005	2006
56	Fertilisers (other than those of group 272)	0.98	0.99	0.99	0.99	0.97	0.98	0.98	0.98	0.97
52	Inorganic chemicals	0.81	0.86	0.85	0.80	0.76	0.75	0.78	0.76	0.66
67	Iron and steel	0.55	0.38	0.63	0.56	0.56	0.64	0.74	0.70	0.62
51	Organic chemicals	0.36	0.43	0.64	0.53	0.51	0.51	0.53	0.54	0.50
61	Leather, leather manufactures, n.e.s., and dressed furskins	-0.32	-0.17	0.06	-0.12	0.26	0.37	0.33	0.30	0.30
66	Non-metallic mineral manufactures, n.e.s.	0.55	0.39	0.34	0.38	0.41	0.33	0.35	0.40	0.29
63	Cork and wood manufactures (excluding furniture)	-0.12	0.23	0.24	0.05	0.04	-0.01	0.02	0.04	-0.03
64	Paper, paperboard and articles of paper pulp, of paper or of paperboard	-0.47	-0.29	-0.29	-0.32	-0.41	-0.49	-0.53	-0.57	-0.64
65	Textile yarn, fabrics, made-up articles, n.e.s., and related products	-0.60	-0.50	-0.42	-0.47	-0.46	-0.48	-0.48	-0.60	-0.70
79	Other transport equipment	-0.28	-0.70	0.04	-0.14	-0.65	-0.12	-0.40	-0.19	-0.71
69	Manufactures of metals, n.e.s.	-0.65	0.17	0.14	-0.42	-0.63	-0.73	-0.73	-0.70	-0.73
62	Rubber manufactures, n.e.s.	-0.90	-0.81	-0.82	-0.90	-0.90	-0.85	-0.89	-0.81	-0.76
82	Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	-0.86	-0.70	-0.68	-0.72	-0.74	-0.71	-0.67	-0.68	-0.76
71	Power-generating machinery and equipment	-0.57	-0.13	-0.14	-0.20	-0.61	-0.47	-0.63	-0.68	-0.76
59	Chemical materials and products, n.e.s.	-0.67	-0.64	-0.64	-0.73	-0.77	-0.80	-0.81	-0.84	-0.83
57	Plastics in primary forms	-0.42	-0.39	-0.46	-0.61	-0.77	-0.81	-0.80	-0.80	-0.85
89	Miscellaneous manufactured articles, n.e.s.	-0.79	-0.67	-0.70	-0.74	-0.92	-0.89	-0.91	-0.89	-0.89
76	Telecommunications and sound-recording and reproducing apparatus and equipment	-0.94	-0.87	-0.92	-0.95	-0.96	-0.98	-0.98	-0.98	-0.90
84	Articles of apparel and clothing accessories	-0.48	-0.18	-0.43	-0.60	-0.67	-0.73	-0.79	-0.84	-0.91
88	Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	-0.87	-0.81	-0.90	-0.90	-0.90	-0.91	-0.92	-0.90	-0.91
53	Dyeing, tanning and colouring materials	-0.89	-0.74	-0.92	-0.91	-0.96	-0.96	-0.96	-0.95	-0.91
77	Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	-0.91	-0.59	-0.61	-0.86	-0.87	-0.90	-0.91	-0.90	-0.91
87	Professional, scientific and controlling instruments and apparatus, n.e.s.	-0.91	-0.74	-0.72	-0.70	-0.76	-0.89	-0.92	-0.91	-0.92
73	Metalworking machinery	-0.69	-0.62	-0.52	-0.78	-0.84	-0.94	-0.91	-0.92	-0.93
81	Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	-0.98	-0.98	-0.94	-0.98	-0.98	-0.96	-0.96	-0.94	-0.94
55	Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	-0.94	-0.85	-0.87	-0.92	-0.93	-0.93	-0.91	-0.92	-0.95
72	Machinery specialised for particular industries	-0.93	-0.86	-0.87	-0.92	-0.93	-0.93	-0.93	-0.94	-0.95
58	Plastics in non-primary forms	-0.99	-0.97	-0.94	-0.99	-0.99	-0.98	-0.98	-0.97	-0.97
74	General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	-0.93	-0.87	-0.82	-0.83	-0.93	-0.93	-0.95	-0.97	-0.97
75	Office machines and automatic data-processing machines	-0.96	-0.93	-0.96	-0.98	-0.97	-0.97	-0.97	-0.97	-0.98
83	Travel goods, handbags and similar containers	-0.92	-0.85	-0.95	-0.95	-0.94	-0.95	-0.95	-0.97	-0.98
85	Footwear	-0.92	-0.82	-0.94	-0.95	-0.96	-0.97	-0.96	-0.96	-0.98
78	Road vehicles (including air-cushion vehicles)	-0.85	-0.80	-0.82	-0.92	-0.93	-0.95	-0.96	-0.97	-0.98
54	Medicinal and pharmaceutical products	-0.91	-0.89	-0.96	-0.98	-0.98	-0.96	-0.99	-1.00	-0.99
<b>Average for manufactured products</b>		<b>-0.51</b>	<b>-0.36</b>	<b>-0.33</b>	<b>-0.50</b>	<b>-0.56</b>	<b>-0.58</b>	<b>-0.55</b>	<b>-0.57</b>	<b>-0.63</b>

Source: UN Comtrade Database, SITC Rev.3., author's calculations. Accessed June 2008.

## 5. Revealed comparative advantages: Russia-China trade

Product group (SITC)	1998	1999	2000	2001	2002	2003	2004	2005	2006
56 Fertilisers (other than those of group 272)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
51 Organic chemicals	0.63	0.71	0.77	0.78	0.76	0.77	0.78	0.70	0.64
71 Power-generating machinery and equipment	0.88	0.97	0.94	0.98	0.98	0.98	0.93	0.83	0.57
67 Iron and steel	0.98	0.99	0.99	0.99	0.98	0.99	0.96	0.91	0.47
64 Paper, paperboard and articles of paper pulp, of paper or of paperboard	0.56	0.68	0.66	0.50	0.62	0.53	0.48	0.37	0.17
55 Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	-0.98	-0.94	-0.79	-0.91	-0.75	-0.53	-0.03	0.30	0.14
79 Other transport equipment	0.80	1.00	0.98	0.98	0.98	0.95	0.86	0.84	0.08
73 Metalworking machinery	1.00	0.89	0.76	0.43	0.38	0.66	0.63	0.16	-0.10
57 Plastics in primary forms	0.99	1.00	0.99	0.99	0.96	0.92	0.87	0.45	-0.26
52 Inorganic chemicals	0.66	0.36	0.20	0.11	-0.04	-0.21	-0.12	-0.23	-0.29
61 Leather, leather manufactures, n.e.s., and dressed furskins	-0.42	-0.17	-0.35	-0.61	-0.04	0.59	0.43	0.06	-0.42
63 Cork and wood manufactures (excluding furniture)	-0.59	-0.34	-0.08	-0.29	-0.16	-0.21	-0.48	-0.56	-0.48
87 Professional, scientific and controlling instruments and apparatus, n.e.s.	0.81	0.86	0.58	0.59	0.46	0.44	0.07	-0.10	-0.55
59 Chemical materials and products, n.e.s.	-0.84	-0.86	-0.71	-0.30	-0.26	-0.08	-0.69	-0.69	-0.71
69 Manufactures of metals, n.e.s.	0.63	-0.34	-0.31	-0.23	-0.29	-0.54	-0.81	-0.82	-0.85
77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	0.44	0.00	-0.38	0.00	-0.55	-0.67	-0.84	-0.84	-0.89
74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	0.14	0.43	-0.19	0.02	0.31	-0.06	-0.72	-0.81	-0.89
88 Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	-0.93	-0.76	-0.79	-0.71	-0.65	-0.78	-0.64	-0.92	-0.90
76 Telecommunications and sound-recording and reproducing apparatus and equipment	0.03	0.02	-0.22	-0.47	-0.53	-0.59	-0.70	-0.78	-0.91
72 Machinery specialised for particular industries	0.49	0.46	-0.33	-0.35	-0.44	-0.45	-0.81	-0.94	-0.95
62 Rubber manufactures, n.e.s.	-0.57	-0.68	-0.72	-0.54	-0.59	-0.71	-0.85	-0.94	-0.95
89 Miscellaneous manufactured articles, n.e.s.	0.00	-0.07	0.30	-0.22	-0.64	-0.70	-0.90	-0.93	-0.96
66 Non-metallic mineral manufactures, n.e.s.	-0.82	-0.80	-0.62	-0.63	-0.78	-0.82	-0.90	-0.92	-0.96
53 Dyeing, tanning and colouring materials	-0.94	-0.97	-0.89	-0.83	-0.93	-0.96	-0.88	-0.92	-0.96
65 Textile yarn, fabrics, made-up articles, n.e.s., and related products	-0.96	-0.84	-0.79	-0.98	-0.96	-0.97	-0.98	-0.97	-0.97
54 Medicinal and pharmaceutical products	-0.69	-0.90	-0.87	-0.96	-0.98	-0.96	-0.99	-0.98	-0.98
58 Plastics in non-primary forms	-0.98	-0.96	-0.98	-0.95	-0.93	-0.97	-0.97	-0.99	-0.98
82 Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	-0.99	-0.87	-0.97	-0.99	-0.99	-0.97	-0.99	-1.00	-0.99
78 Road vehicles (including air-cushion vehicles)	0.51	0.06	0.51	-0.20	-0.45	-0.57	-0.85	-0.98	-0.99
75 Office machines and automatic data-processing machines	-0.94	-0.42	-0.90	-0.76	-0.90	-0.94	-0.97	-0.99	-0.99
81 Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	-0.32	-0.15	-0.88	-0.99	-1.00	-0.99	-1.00	-0.99	-1.00
83 Travel goods, handbags and similar containers	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
84 Articles of apparel and clothing accessories	-1.00	-1.00	-1.00	-0.99	-0.99	-1.00	-1.00	-1.00	-1.00
85 Footwear	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
<b>Average for manufactured products</b>	<b>0.40</b>	<b>0.46</b>	<b>0.31</b>	<b>0.31</b>	<b>0.19</b>	<b>-0.01</b>	<b>-0.26</b>	<b>-0.38</b>	<b>-0.59</b>

Source: UN Comtrade Database, SITC Rev.3., author's calculations. Accessed June 2008.